

Laparoscopic interpretation of pelvic pathologies in infertile women

İnfertil kadınlarda pelvik patolojilerin laparoskopik yorumu

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Abstract

Background: Aim of this study is to evaluate the results of diagnostic laparoscopy in 82 infertile women.

Methods: Eighty-two infertile women that underwent diagnostic laparoscopy were examined retrospectively and pelvic pathologies were classified.

Results: Pathologic findings were observed in 65.85% of cases and 34.15% of patients had no abnormal finding. Pathologic findings were classified as; tubal (40.24%), ovarian (1.22%), uterine (4.88%), endometriosis (10.98%), pelvic inflammatory disease (2.44%) and mixed pathologies (6.09%). Frequency of endometriosis is 11.32% in primary and 10.34% in secondary infertile cases. Adnexal adhesions were observed in 37.80% of infertile cases; predominantly in secondary infertile cases (44.82%) and less frequently in primary infertile cases (33.96%). Minimal, mild, moderate and severe adnexal adhesions were observed in 41.94%, 38.48%, 12.90% and 9.68%; respectively.

Conclusions: Laparoscopy plays an important role both in the diagnosis and evaluation of infertility. We have the opinion that it would be inappropriate to evaluate infertility without laparoscopy, especially in the presence of pelvic adhesion and endometriosis.

Key words: infertility, laparoscopy, pelvic pathology

Özet

Amaç: Seksen iki infertil kadına uygulanan diagnostik laparoskopisi sonucunun değerlendirilmesi

Materyal ve metod: Seksen iki infertil olguya yapılan diagnostik laparoskopinin sonuçları, retrospektif olarak incelendi ve pelvik patolojiler sınıflandırıldı.

Bulgular: Diagnostik laparoskopisi yapılan 82 infertil olgunun %34,15'i normal olarak değerlendirilirken, %65,85'inde ise patoloji saptandı. Tubal patoloji (%40,24), ovarian patoloji (%1,22), uterin patoloji (%4,88), endometriozis (%10,98), pelvik inflamatuvar hastalık (PIH) (%2,44), mikst patoloji (%6,09) tespit edilen patolojilerdi. Endometriozis, primer infertil olguların %11,32'sinde, sekonder infertil olguların %10,34'ünde tespit edildi. Adneksial adezyon oranı %37,80 idi; primer infertil olguların %33,96, sekonder infertil olguların %44,82'sinde adneksial adezyon saptandı. Adneksial adezyonların %41,94 minimal, %35,48 hafif, %12,90 orta, %9,68 ciddi lezyonlardı.

Sonuç: Laparoskopisi, infertilite tanı ve tedavisinin planlanmasında önemli bir yere sahiptir. Özellikle pelvik adezyon ve endometriozis açısından laparoskopisiz infertilite araştırmasının tamamlanamayacağı yönünde sonuç bildiren literatürle fikir birliği içine girildi.

Anahtar kelimeler: infertilite, laparoskopisi, pelvik patoloji

Introduction

Infertility is defined as insufficiency to develop pregnancy without using a contraception method for 1 year period of normal sexual activity (1). The prevalence of women diagnosed with infertility is approximately 13%, with a range from 7-28%, depending on the age of the woman (2). Primary infertility describes patients without a previous pregnancy and secondary infertility is used to define infertile cases with at least one previous pregnancy.

Laparoscopy is a diagnostic and therapeutic method widespread used in Gynecology. Recently 80% of gynecological operations were carried out laparoscopically (3). Diagnostic laparoscopy is used; especially in infertile cases, to evaluate upper abdomen, pelvis, uterus, ovary, tuba uterine and

peritoneal factors. Tubal patency is determined by chromopertubation. Resection and ablation of endometriosis focuses; detected by diagnostic laparoscopy, would enhanced the probability of pregnancy (4).

Our aim was to evaluate results of diagnostic laparoscopy in 82 infertile women.

Methods

82 infertile women that underwent to diagnostic laparoscopy were analyzed, retrospectively. Uterine manipulator was replaced to cervix in lithotomic position under general anesthesia. Pneumoperitoneum was obtained by Verres needle that replaced to intraabdominal space with infraumbilical incision. Trocar in 10 mm diameter was replaced to same area and

laparoscopy was put forward through the trocar cannula. Pelvic area was examined in Trendelenburg position. Atraumatic grasper forceps was replaced by assistance of trochar in 5 mm diameter to obtain better visualization. Second trochar in 5 mm diameter was replaced when necessary. Tubal patency was determined by 5% metylene blue, injected through uterine manipulator. At the end of the procedure, laparoscope was removed, intraabdominal gas was evacuated as much as possible and incision area was sutured.

Note: This study was performed in accordance with the principles of the Declarations of Helsinki.

Results

82 infertile cases that underwent to diagnostic laparoscopy were classified according to primary or secondary infertility. Primary and secondary infertility rates were 64.63% and 35.37%, respectively. Mean age of primary and secondary infertile patients were 28.54 ± 5.27 (age between 19 and 42 years) and, 30.82 ± 4.84 years (age between 21 and 40 years), respectively. Mean durations of infertility were 6.79 ± 5.16 (minimum 1.5 and maximum 26 years) and 30.82 ± 4.84 years (minimum 21 and maximum 40 years), respectively. Table 1 indicates the distributions of infertile cases according to laparoscopic pelvic examination.

No pathological finding was present in 34.15% of patients however 65.85% of patients have pathological finding determined by diagnostic laparoscopy.

Adnexal adhesion was observed in 31 of 37 patients (33 patients with only tubal and 4 patients with mixed pathology). Table 2 shows the distributions and classification of adhesion according to American Fertility Society (AFS).

Adnexal adhesion was present in 33.96% of primary and 44.82% of secondary infertile cases. Minimal or mild and less frequently moderate or severe adhesions were observed in infertile patients; especially in secondary cases. No significant correlations exist between duration of infertility and severity of adhesions. Table 3 points out the distributions and classification of endometriosis according to AFS. Endometriosis was observed in 11.32% of primary and 10.34% of secondary infertile cases.

Discussion

Diagnostic laparoscopy plays important role in the evaluation of infertility. It would be insufficient to evaluate infertility without laparoscopy. Laparoscopy can provide valuable clinical information in a number of circumstances and it is especially useful to identify pelvic adhesions, endometriosis, hernias, uterine

fibroids, and masses (5).

Recently, diagnostic laparoscopy most frequently used to evaluate infertility. We also perform laparoscopic examination to evaluate infertility. Reid et al. stated that they generally perform laparoscopy to examine infertile patients and pointed out that 46% of patients have pelvic pathology (6). In a study from Nigeria, rate of bilateral tubal obstruction was 35.3%, unilateral tubal obstruction was 9.6%, endometriosis was 1.4%, pelvic adhesion was 55% and uterine fibrinoid was 26.6% (7). Distributions of pelvic pathologies in our study were; tubal pathology was 40.24%, pelvic adhesion was 37.80%, bilateral tubal obstruction was 14.63%, unilateral tubal obstruction was 4.87%, endometriosis was 10.98%, uterine pathology was 4.88%, PID was 2.44%, mixed pathology 6.09% , ovarian pathology 1.22 %.

Hamid et al. determined that rate of pelvic adhesions and endometriosis in infertile cases was 20% and 9%, respectively. In another study carried out by El-Takia et al. pelvic disease was observed in 57.7% of cases. Distribution of pelvic pathologies were as; endometriosis (27.7%) and pelvic adhesions (20.8%) (8, 9)

We observed pelvic pathologies in 65.85% of patients. Adnexal adhesions and endometriosis were detected in 37.80% and 10.98% of patients, respectively. Ratio of adhesions in primary and secondary infertile cases were 33.96% and 44.82%, respectively. Disturbance of endometriosis in primary and secondary infertile cases were 11.32% and 10.34%, respectively.

In a study from Israel, Lavy et al. stated that it is not necessary to perform laparoscopy for patients with normal hysterosalpingogram and unilateral tubal pathology and would cause no alteration in therapeutical approach however laparoscopic examination is beneficial for patients with bilateral tubal pathology and would cause therapeutical modification (10). Cundiff et al. achieved pregnancy rate of 35% subsequent to therapeutical change modified by laparoscopy (11). Further studies and time are required to determine that fertility rate enchances by therapeutical methods based on laparoscopic examination.

Complication rates of diagnostic and operative laparoscopy is 57% according to Martin et al. Major complications were vessel injury, bladder and uterus perforation, postoperative bowel obstruction, infection and disseminated intravascular coagulation (12). Laparoscopy was performed successfully and no patient experienced surgical or anesthesia associated complications in perioperative or postoperative period. Entire patients discharged in the 1st day with health.

Laparoscopy is an effective and precious diagnostic frequently used in the 2nd half of 20th century. It is a standard procedure performed in the diagnosis of pelvic adhesions and endometriosis though no other procedure

has similar sensitivity (13). Direct observation of pelvic organs and its facility to diagnose pelvic adhesions leads to regulate an objective therapeutic approach. Pelvic adhesion and endometriosis are the most frequent pathologies in our study and this finding supports the importance of laparoscopy in the

diagnosis of infertility. Our study supports the idea that evaluation of infertility without laparoscopy is inadequate, especially in the presence of pelvic adhesion and endometriosis.

Table 1: Distributions of infertile cases according to laparoscopic pelvic examination

Pathologic findings	Patients (n)	Percent (%)
Normal	28	34.15
Tubal Pathology	33	40.24
Ovarian Cyst	1	1.22
Uterine Pathology	4	4.88
Endometriosis	9	10.98
PID	2	2.44
Mixed	5	6.09
Total	82	100

Table 2: Distributions and classification of □dnexial adhesion according to AFS*

Severity of adhesion	Cases (n)	Percent (%)
Minimal	13	41.94
Mild	11	35.48
Moderate	4	12.90
Severe	3	9.68
Total	31	100

*AFS: American Fertility Society

Table 3: Distributions and classification of endometriosis according to AFS*

Severity of endometriosis	Cases (n)	Percent (%)
Minimal	4	44.44
Mild	4	44.44
Moderate	1	11.11
Severe	—	—
Total	9	100

*AFS: American Fertility Society

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References

- Gorkemli H. Approach to infertile patient. Cicek MN, Akyurek C, Celik C, et al. eds. Gynecology and Obstetrics. Ankara: Gunes Bookstore, 2004: 1081.
- Kumar A, Ghadir S, Eskandari N, DeCherney AH. Reproductive endocrinology & infertility. In: DeCherney AH, et al. eds. Current Diagnosis and Treatment, Obstetrics and Gynecology 10th ed. USA: McGraw-Hill Companies, 2007: 917.
- DeCherney AH, Semm K. Gynecological surgery and endoscopy. Curr Opin Obstet Gynecol 1991; 3: 359.
- Marcoux S, Maheux R, Berube S. Laparoscopic surgery in infertile women with minimal or mild endometriosis. Canadian Collaborative Group on Endometriosis. N Eng Med 1997; 337: 217-222.
- Sharp HT, Francis SL, Murphy AA. Diagnostic and operative laparoscopy. In: Rock JA, Jones III HW, eds. Te Linde's Operative Gynecology 10th ed. Philadelphia: Lippincott Williams & Wilkins companies, 2008: 319.
- Reid S, Roopnarinesingh S, Schatsingh J. An Assesment of the role of diagnostic laparoscopy in trinidad. West Indian: Med J (Jamaica) 1986; 365: 92.
- Otolorin EO, Ojengbede O, Falase AO. Laparoscopic evaluation of the tuboperitoneal factor in infertile Nigerian women. Int J Gynaecol Obstet 1987; 25(1): 47-52.
- Hamid R, Khan KS, Mubeen T, Razzak JA. Laparoscopic appraisal of infertility and pelvic pain in Pakistan women: a 5 year aduit. JPMA J Pak Med Assoc 1994; 44: 40.
- El-Takia AW. Laparoscopic evaluation of apparently normal infertile women. Aust NZ J Obstet Gynecol 1994; 34(4): 440-442.
- Lavy Y, Lev-Sagie A, Holtzer H, et al. Should laparoscopy be a mandatory component of the infertility evaluation in infertile women with normal hysterosalpingogram or suspected unilateral distal tubal pathology. Eur J Obstet Gynecol Reprod Biol 2004; 114(1): 64-68.
- Cundiff G, Carr BR, Marshburn PB. Infertile couples with a normal hysterosalpingogram. Reproductive outcome and it's relationship to clinical and laparoscopic findings. J Reprod Med 1995; 40(1): 19-24.
- Martin JR, Whitted R, Latchaw GA, et al. Complications of operative and diagnostic laparoscopy: a retrospective study. Obstet Gynecol 2001; 97(4): 20.
- Munro MG, Brill AI. Gynecologic endoscopy. In: Berek JS, eds. Novak's Gynecology. 13th ed. Philadelphia: Lippincott Williams & Wilkins Company 2002: 711-712.